The secrets to successful entrepreneurship: How occupational experience shapes the creation and performance of start-ups

Abstract

Purpose: Previous experience is a critical factor affecting entrepreneurial activities; however, it has not been fully studied in the existing literature. This study attempts to comprehensively reveal the routes and mechanisms of occupational experience that affect entrepreneurial activities and assess the entrepreneurial potential of different occupational practitioners.

Design/methodology/approach: By matching occupational characteristics with entrepreneurs' competence, this study proposes ten hypotheses about how occupational experience affects entrepreneurial entry and performance. This empirical study is based on the Occupational Information Network database and Chinese survey data. Factor and regression analyses were used in the empirical research.

Findings: This study verifies that different occupational practitioners have varied entrepreneurial potential. Occupational experience, including occupational uncertainty, market contact, and social capital, gained from previous experience significantly affects entrepreneurial entry. Meanwhile, occupational characteristics, including management experience, marketing experience, social capital, financial capital, risk-taking ability, and creativity, accumulated from previous experience, have a significant impact on entrepreneurial performance.

Originality/value – This study is a pioneering attempt to reveal the relationship between occupational experience and entrepreneurial activities. The transmission mechanism of previous experiences affecting entrepreneurial activities is comprehensively revealed by relaxing the assumption of a representative occupation. These findings provide a theoretical foundation for empirical evidence and have important practical value.

Keywords: Occupational experience, Entrepreneurial entry, Entrepreneurial performance

Paper type: Research paper

1. Introduction

With increasing global competition and deteriorating economic turmoil, start-ups have played an indispensable role in increasing employment and accelerating economic growth (Hill *et al.*, 2022). According to a survey of the Global Entrepreneurship Monitor in the U.S., although 66.9 percent of the respondents believed that it was easy to launch a business, only 16.5 percent of the respondents put their entrepreneurial plans into practice, and only 8.9 percent of the start-ups experienced sustainable and competitive development (Hill *et al.*, 2022). Considering the founders' decisive influence on the establishment and development of start-ups, the majority of professional venture capitalists pay more attention to the founders' competence and experience rather than external opportunities when evaluating an investment (Macmillan *et al.*， 1985). Therefore, it is of great theoretical and practical significance to investigate what kinds of people are willing to start a business and have the potential to succeed.

A large body of literature on entrepreneurship argues that entrepreneurs' previous experience generally plays an important role in predicting the outcomes of start-ups and has a positive effect on entrepreneurial performance (e.g., Failla, 2015; Jiao *et al*., 2021). The human capital perspective suggests that both formal education and work experience are primary sources of competence for founders (Agarwal *et al.*, 2016). In particular, previous experience is more important than educational background because it can provide special human capital for entrepreneurs to start new businesses (Failla, 2015; Sahinidis *et al.*, 2021). According to Shane (2000), entrepreneurs can discover opportunities related only to

their “knowledge corridor,” such as the knowledge of products, services, market environment, and customers, most of which is acquired from previous work experience. Entrepreneurs will certainly introduce previous experiences into start-up firms and integrate various resources through continuous learning when they start a new business. The essence of entrepreneurial activity is knowledge transfer (Taylor, 2017). The growth of start-ups is closely related to founders’ knowledge of products, services, and resources accumulated from previous experience. Ample evidence suggests that most successful entrepreneurs acquire sufficient work experience before initiating a business plan. A study of 179 high-tech companies in Silicon Valley found that 85 percent of the founders had worked for at least five companies before their own start-ups (Bruno and Tyebjee, 1985). Robinson and Sexton (1994) pointed out that, contrary to the popular myths of entrepreneurs who dropped out of college, such as Bill Gates and Larry Page, most start-ups are founded by people with comprehensive employment experience. It is commonly accepted that investors often regard experience as an important signal for entrepreneurs to achieve success when making investment decisions (Carpentier and Suret, 2015) and that experience is highly beneficial to opportunity identification and entrepreneurial performance (Shepherd and DeTienne, 2005; Unger *et al*., 2011).

Despite the extensive evidence that occupational experience constitutes an important determinant of entrepreneurial activity, there has been no detailed investigation into the occupational characteristics that affect the choice of entrepreneurial career and how such occupational

characteristics translate into entrepreneurial behaviours (Laffineur *et al.*, 2020). Tremendous empirical evidence indicates that entrepreneurial activities present remarkable differences among different occupational practitioners. For example, compared with accountants or actuaries, scientists and engineers are generally considered to have more entrepreneurial potential (Sorgner, 2012). Shane (2008) proposed that probability varies greatly among occupations in terms of generating entrepreneurs. For example, the percentage of self-employed podiatrists is almost 2700 times higher than teachers in elementary schools. Although some studies have examined the relationship between work experience types (e.g., white-collar or blue-collar workers, employees, or managers) and entrepreneurial behaviours (Kautonen *et al*., 2010; Miralles *et al*., 2016), the reasons for the heterogeneity among different occupations have not been explained well and examined using empirical methods.

Owing to the diversity of occupational categories and the complexity of occupational characteristics (non-standardised and incomparability), it is difficult to accurately define and quantitatively evaluate occupational experience. Therefore, existing literature has always treated occupational experience as a "black box" awaiting further exploration, and the mechanism by which occupational experience affects entrepreneurial activities remains unclear. In other words, the motivational mechanism linking occupational characteristics with entrepreneurial behaviours has not been directly investigated (Laffineur *et al*. 2020). Are there differences in the entrepreneurial behaviours of white-collar workers (or managers)? Why are there differences in the entrepreneurial behaviours of people who work in different occupations? What occupation makes people more willing

to start a business and produce better entrepreneurial performance? Previous studies have not empirically explained these questions.

To determine why practitioners in different occupations have different entrepreneurial behaviours, the “black box” of representative occupations must be opened. Based on the database of O*NET (The Occupational Information Network), this study uses the method of factor analysis to quantitatively evaluate occupational experience and remove the obstacles caused by the diversity of occupational categories and the complexity of occupational characteristics. By relaxing the hypothesis on representative occupations and matching occupational characteristics with entrepreneurial capital and competence, this study reveals the underlying reasons why occupational experience influences the generation and performance of start-ups. In contrast to the rough classification of work experience in the previous literature (e.g., blue-collar and white-collar workers, ordinary employees and managers, public and private sector employees), this study evaluates the heterogeneity of different occupations from the nine aspects of entrepreneurial capital and competence. This solution will help clearly reveal the ambiguous relationship between occupational experience and entrepreneurial activities. Furthermore, this study assesses the indices of entrepreneurial entry and performance for each occupation based on empirical results.

This study may make two primary contributions to theoretical development and practical exploration. First, the mechanism by which occupational experience affects entrepreneurial activities remains ambiguous (Sahinidis *et al.*,2021). This study is a pioneering attempt to explain

and examine the heterogeneity of entrepreneurial behaviours across different occupations. This study provides theoretical support for the existing empirical evidence through new insight into the relationship between occupational characteristics and entrepreneurial behaviours. Second, the assessment of entrepreneurial potential for each occupation, rather than a rough classification of occupational experience, will provide more specific practical guidance for entrepreneurial activities. Venture capitalists may use founders' occupational experience to evaluate the probability of a successful venture investment. Therefore, people who want to start a new firm in the future can better plan their careers and accumulate professional knowledge, skills, and vision, therby preparing sufficiently for potential entrepreneurial practices.

2. Theoretical Background

Entrepreneurial activities can be classified into three types: entry into entrepreneurship, performance outcomes, and exit from entrepreneurship (Kerr *et al.*, 2018). As previous work experience and entrepreneurial entry are contiguous in time, work experience has a direct impact on entrepreneurial entry and entrepreneurial performance (Marshall and Gigliotti, 2020). It is generally believed that financial benefits, external environment, personal reasons, and so on are the direct reasons for entrepreneurial exit, but there is no direct correlation between work experience and entrepreneurial exit (Strese *et al.*, 2018; Pinkovetskaia, *et al.*, 2020). To the best of our knowledge, very few studies have examined the impact

of work experience on entrepreneurial exit, and the effects are not significant (DeTienne and Cardon, 2012). This study focuses on how occupational experience affects entrepreneurial entry and performance.

2.1 Work experience and entrepreneurial entry

For the relationship between work experience and entrepreneurial entry, many studies have confirmed that an entrepreneur's work experience will enable them to identify entrepreneurial opportunities and gain relevant business information more easily (e.g., Gielnik *et al.*, 2018; Li *et al.*, 2019). Meanwhile, work experience could also help founders expand their network, which would aid venture creation (Bignotti and le Roux, 2020). Many studies have examined the relationship between experience types and entrepreneurial entry.

(1) White-collar work experience is more helpful for entrepreneurial entry than blue-collar (Miralles *et al.*, 2016). Blue-collar work experience is characterised by highly specialised and monotonous tasks that are controlled through hierarchical power, leaving scarce worker autonomy and need to be creative (Braverman, 1974; Kautonen *et al*., 2010). Meanwhile, a blue-collar industrial environment may give rise to a culture that is unfavourable to entrepreneurship (Hennequin, 2007). Therefore, a career in blue-collar industrial work is negatively related to an individual's subsequent entrepreneurial entry (Zapkau *et al*., 2015).

(2) A career in the public sector is negatively correlated with entrepreneurial entry (Kautonen *et al*., 2010). Traditionally, careers in public

institutions have involved a high degree of task specialisation, adherence to formal rules and procedures, and the expectation of working for one employer for life (Leyden, 2016). This implies that individuals who have spent their careers in public services might be less inclined towards enterprising behaviour (McDonough, 2006).

(3) Prior work experience in a small or newly founded firm positively influences entrepreneurial entry (Zapkau *et al*., 2015; Marshall and Gigliotti, 2020), because top managers and potential entrepreneurs are likely to have frequent close contact; the top manager becomes a credible role model for the entrepreneur (Cooper, 1971; Shapero and Sokol, 1982).

(4) Job dissatisfaction represents a push factor in creating one's own business (Guerra and Patuelli, 2014). Meanwhile, people whose occupations are characterised by high levels of unemployment and earning risks are more likely to start a business (Sorgner and Fritsch, 2013; Li *et al.*, 2021). As Laffineur *et al*. (2020) state, career hardships and a lack of self-fulfilment drive workers towards entrepreneurship.

(5) Diverse work experiences will lead to an increase in willingness to start a business (Astebro and Thompson, 2011; Astebro and Yong, 2016; Kurczewska and Mackiewicz, 2020) because the breadth of functional work experience will favour the generation of new business ideas (Gabrielsson and Politis, 2012; Chen and Thompson, 2016). Krieger *et al.* (2018) argued that individuals with diverse skills tend to choose to become entrepreneurs more so than those with less diverse skills.

However, some studies have taken a negative view of the relationship between work experience and entrepreneurial entry (Bakri and Mehrez, 2017; Gabrielsson and Politis, 2012). For example, Gabrielsson and Politis (2012) pointed out that the longer one stays in the same industry, the fewer business ideas they will generate. Miralles *et al*. (2015) claimed that evidence of the relationship between work experience and entrepreneurial entry is still weak. One possible reason for the absence of a clear direct link stems from significant difficulties in measuring and comparing individual experiences (Sahinidis *et al.*, 2021).

To summarize, the current literature has confirmed the important influence of work experience on entrepreneurial entry and further examines the impact of different types of work experience on entrepreneurial entry, such as blue- and white-collar jobs, employment in the public and private sectors, and experience in small and large companies. However, the types of work experience have been roughly categorised in previous studies. Unfortunately, they explained the empirical results normally based on pure subjective speculations. For example, they speculated that blue-collar workers were less creative than white-collar workers without considering that not all white-collar jobs need creativity and that not all white-collar workers are talented and creative. The present literature has treated occupation as a "black box" and did not examine why different occupations have particular effects. We believe that only by opening the "black box" of occupation can we comprehensively and precisely analyse the differences in the knowledge, competence, and capital of different occupations, helping us to understand the heterogeneity of different types of

experience more reasonably. Otherwise, it would be difficult to explain why there are significant differences in the entrepreneurial willingness of white-collar workers. In conclusion, a more elaborate investigation is needed to uncover the mechanisms by which occupational experience affects entrepreneurial entry.

2.2 Work experience and entrepreneurial performance

With regard to the relationship between work experience and entrepreneurial performance, the present research believes that work experience accumulated from previous jobs can promote founders to acquire relevant knowledge and skills as well as achieve success (e.g., Federico *et al*., 2009; Ulvenblad *et al*., 2013; Astebro and Yong, 2016; Arte *et al*., 2017; Zhao *et al*., 2021), because the organisations entrepreneurs worked for are perfect places for them to approach information, acquire skills, and absorb knowledge (Sørensen and Fassiotto, 2011). What they acquired from their former employers will be unconsciously transmitted to the new context of start-ups, which can produce positive effects on the performance of nascent firms (Agarwal *et al*., 2016). Many empirical studies have confirmed that the more experienced entrepreneurs, the more sustainable their start-ups (Brüderl and Preisendorfer, 1998; Baum and Locke, 2004; Delmar and Shane, 2006; Welch and Welch, 2009; Astebro and Yong, 2016). For example, Brüderl and Preisendorfer (1998) found that the survival rate of start-ups enrolled within three years is largely influenced by the work experience of the owner and manager. Delmar and Shane (2006) also insisted that entrepreneurs with experience in diverse

industries will perform better than those with ordinary and insufficient industry experience when venturing into a new business.

Regarding the relationship between types of work experience and entrepreneurial performance, the theory of "jacks-of-all-trades" has been gaining increasing popularity in this field (Patel and Ganzach, 2019; Kurczewska et al., 2020). At the heart of this theory is the idea that an entrepreneur must have sufficient knowledge in a range of fields to put together the factors that a start-up needs to survive and succeed (Lazear, 2004). Entrepreneurs must be "all-rounders" (Stebro and Thompson 2011). Entrepreneurs' balanced skills can be accumulated through diverse jobs and working for different employers (Backes-Gellner and Moog, 2013; Vogel *et al.*, 2014). Failla (2015) further pointed out that successful "jacks-of-all-trades" seem to be entrepreneurs who do not wander around different industries or companies but gain experience by undertaking specific roles in mature organisations.

However, recent literature suggests that different types of experiences contribute differently to entrepreneurial performance. It is widely accepted that a specific experience is more conducive to entrepreneurial success than a generic one (Furlan, 2019). Under the lens of human capital theory, industry and entrepreneurial experience are regarded as task-related human capital, which is more specialised and relevant to entrepreneurial tasks (Unger *et al*., 2011). Founders with experience in the same industry as their new venture should have better established professional networks and more applicable marketing and management expertise than those without relevant industry experience (Barringer *et al.*,

2005). By contrast, generic experience provides entrepreneurs with general knowledge which differs from the knowledge and skills required by them (Colombo and Grilli, 2005). Therefore, the relationship between founders' prior experience and firm performance is stronger for specific experiences (industry experience and start-up experience) than generic experiences (Jiao *et al*., 2021).

In conclusion, although researchers have reached a general consensus on the importance of founders' work experience, the present studies on the relationship between the types of work experience and entrepreneurial performance are still relatively superficial. Founders' work experience varies in degree and nature; however, its differential roles in resource acquisition in new ventures have not been thoroughly examined (Zhao *et al*., 2021). The approach normally dividing work experience into general and specific experiences is used in accordance with the theoretical hypothesis of "knowledge corridor," but ignored the influence of work experience on the founders' competence and capital. Consequently, further investigation is needed to explain the specific roles of work experience in entrepreneurial success. Only by deciphering the code hiding in the "black box" of occupation can we comprehensively reveal the mechanism by which work experience affects entrepreneurial performance and provide more particular and valuable guidance for people who want to start a business and invest in start-ups.

3. Research Hypotheses

3.1 The effect of occupational experience on entrepreneurial entry

Entrepreneurial intention is a direct antecedent of entrepreneurial entry (Ozaralli and Rivenburgh, 2016). The theory of planned behaviour (TPB) was widely used as a framework to analyse the impact of previous experience on entrepreneurial intention (Kautonen *et al*., 2010). Ajzen (2002) claimed that intentions are determined by personal attitudes, subjective norms, and perceived behavioural control. Entrepreneurial intentions represent inclinations toward engaging in the venture creation process (Krueger, 2009). Entrepreneurial entry is the result of entrepreneurial intention (Awwad *et al*., 2021). The impact of occupational experience on entrepreneurial entry can also be analysed using the TPB framework. First, personal attitude refer to risk preference. Entrepreneurial process can be regarded as a risky decision-making process (Low and Macmillan, 1988). Risk preference reflects personal attitudes towards starting a new business. Occupational uncertainty is used to represent risk preferences in this study. Second, subjective norms refer to social capital. Subjective norms refer to external support or resistance perceived by entrepreneurial behaviour (Ozaralli and Rivenburgh, 2016). Social capital involves social relationships and networks (Oksanen *et al.*, 2013). Social capital accumulated through work represents the subjective norms of different occupations in entrepreneurial behaviour. Third, perceived behavioural control refer to market contact. The ability of individuals to perceive and recognise entrepreneurial opportunities is an important precondition for entrepreneurial intention and entry (Low and Macmillan, 1988). For practitioners of different occupations, the level of market contact is the main

reason for differences in perceiving and identifying entrepreneurial opportunities. Therefore, market contact can represent perceived behavioural control when examining the influence of occupational experience on entrepreneurial entry.

3.1.1 Occupational uncertainty. Since starting a new business is a high-risk activity (Miller, 1983), risk preference is considered the most important personal trait affecting entrepreneurial intention (Kerr *et al*., 2018). Kihlstrom and Laffont (1979) proposed that people with higher risk preferences are more likely to become entrepreneurs, whereas people with lower risk preferences are suited to be employees. Many empirical studies have verified the positive effect of risk preference on entrepreneurial entry (Karabulut, 2016). Occupational uncertainty also affects entrepreneurial entry. Dyer (1994) points out that an uncertain working environment may lead to an entrepreneurial lifestyle, which leads to a higher level of entrepreneurial intention. Sorgner (2013) claimed that occupations characterised by high levels of unemployment and earnings risk, relatively many job opportunities, and high self-employment rates foster the founding of businesses. Therefore, the first hypothesis is as follows.

H1a. The greater the uncertainty and risk in previous occupations, the higher the probability of entrepreneurial entry.

3.1.2 Market contact. Entrepreneurial opportunity identification is the most important factor that affects entrepreneurial entry (Hoong *et al.,* 2019). In social life, not everyone can equally recognise the same entrepreneurial opportunities caused by technological or market changes (Karabulut, 2016). An individual's previous experience and knowledge helps them realise the value of new information, which makes it easier for

entrepreneurs to find opportunities related to their previous experience and knowledge (Ardichvili *et al*., 2003). Work experience provides opportunities for potential entrepreneurs to obtain knowledge in specific industries, and practitioners can then find potential customers and competitors. Shane (2000) proposed that the knowledge accumulated from an individual's previous work experience, such as customer problems, market service mode, and market knowledge, formed the "knowledge corridor" for entrepreneurs. When entrepreneurs encounter the same opportunity information, they often identify the opportunity that is most closely related to their previous knowledge. This is because meeting customer needs is the reason for the generation of new business ideas (Gabrielsson and Politis, 2012); contacting the market is very important for the discovery of entrepreneurial opportunity. Therefore, the second hypothesis is as follows.

H1b. The greater the opportunities to contact the market in previous occupations, the higher probability of entrepreneurial entry.

3.1.3 Social capital. Social capital is widely considered an important factor in discovering entrepreneurial opportunities (Greve and Salaff, 2003; Liu *et al.*, 2020). In the process of entrepreneurial opportunity identification, social capital plays a promoting role through social interaction activities. Entrepreneurs choose to absorb and exchange opportunity-related information with other network members (Ardichvili *et al*., 2003). The larger the scale of the network embedded by entrepreneurs, the more diverse is the access to information. Previous studies have also found that entrepreneurs embedded in larger networks not only find more entrepreneurial opportunities but also stimulate their creativity through

extensive discussions with different contacts to find more innovative opportunities (Liu *et al.*, 2020). Based on the above analysis, the third hypothesis is proposed:

H1c. The greater the social capital accumulated in previous occupations, the higher probability of entrepreneurial entry.

3.2 The effect of occupational experience on entrepreneurial performance

It is widely recognised that entrepreneurial capital resources determine entrepreneurial behaviour (Bloodgood *et al*., 1996; Guritno *et al*., 2019). Entrepreneurial capital resources include human, knowledge, social, family, emotional, and financial capitals (Mishra, 2015). However, not all entrepreneurial capital resources relate to work experience. The factors accumulated through work experience that are highly related to entrepreneurial performance include management, marketing, technological, and industry experience, and financial and social capitals (Stuart and Abetti, 1990; Sapienza *et al*., 2006; Unger *et al.*, 2011). Industry experience mainly analyses the heterogeneous knowledge and skills of employees in different industries (Furlan, 2019). This is different from the perspective of occupational experience for the purposes of this study, so it needs to be excluded. In addition, in many studies, risk-taking ability and creativity are important competencies of entrepreneurs (Man *et al*., 2002); they have been shown to correlate closely with work experience (Stewart and Roth, 2001; Ohly, 2006). Therefore, this study proposes the following transmission mechanisms for occupational experience affecting entrepreneurial performance: management, marketing, technological experiences,

social and financial capitals, risk-taking ability, and creativity.

3.2.1 Management experience. Managerial experience is acquired by investing time in observing, studying, and making business decisions, and understanding organizational routines (Cooper *et al.*, 1994). Management ability plays a key role in the survival and success of entrepreneurial ventures (Schiuma *et al*., 2021). Entrepreneurs should have excellent resource integration abilities and be able to bring employees together to fight for a common goal (Jain, 2011). It is widely believed that there is a strong positive correlation between founders' management experience and firm performance (Evans and Leighton, 1989; Stuart and Abetti, 1990; Massimo, 2005) because entrepreneurs' management knowledge and skills are valuable for start-ups (Laffineur *et al*., 2020). Failla (2015) argued that management activities involve dealing with broader tasks and less specific activities, so they are more easily transferred to start-ups compared to other specific experiences. Many researchers have demonstrated that entrepreneurs from occupations involving high levels of managerial knowledge will perform better (Laffineur *et al*., 2020). Since practitioners have accumulated different levels of management experience from different occupations, the following hypothesis is proposed.

H2a. The more management experience accumulated in previous occupations, the better the entrepreneurial performance.

3.2.2 Marketing experience. Marketing capability is a firm's ability to understand and accommodate its market needs (Srivastava *et al*., 2001). It is widely accepted that marketing capabilities are important for start-up development (Day, 1994). Many studies have verified the positive effect

of marketing capabilities on firm performance (Morgan *et al*., 2009). Prior marketing experience can help entrepreneurs to better understand products, markets, and customers. Thus, their market-sensing and customer relationship management (CRM) capabilities are enhanced (Reuber and Fischer, 1999). Superior market-sensing capabilities allow a firm to identify underserved segments and those where their rivals' offerings may not fulfil customer and channel requirements (Slater and Narver, 2000). CRM capability can lead to higher customer satisfaction, loyalty, and retention and improve customer relationship performance (Trainor *et al*., 2014). In contrast, if entrepreneurs do not have market experience, they need to spend more time understanding the market environment and cannot quickly establish efficient marketing channels for start-ups (Madsen and Servais, 1997; Anderson *et al.*, 2018). However, not all occupations have the opportunity to accumulate market experiences. Only occupations that have close contact with the market and customers are conducive to gaining market experience. Based on these arguments, we propose the following hypotheses:

H2b. The greater the marketing experience accumulated in previous occupations, the better the entrepreneurial performance.

3.2.3 Technological experience. Technological capability is one of the most critical sources of a firm's competitive advantage (Day, 1994; Krasnikov and Jayachandran, 2008). It concerns new product development, manufacturing processes, technology development, and forecasting technological change in the industry (Song *et al*., 2007). Prior technology experience will determine how the entrepreneur views a project

developing in the future and ultimately affects the firm's ability to predict possible problems (Xu, 2021). Start-ups are more successful when founders possess the appropriate stocks of technological experience (Nerkar and Roberts, 2004). The positive effects of founders' technological background (e.g., R&D experience, patent possession, and CTO experience) on the accumulation of firm-level technological capability have been confirmed (Dietz and Bozeman, 2005; Xu, 2021). This suggests that not all occupations can provide technological experience. Only those with access to core technology can accumulate valuable technological experience. Based on these arguments, we propose the following hypothesis:

H2c. The more technological experience accumulated in previous occupations, the better the entrepreneurial performance.

3.2.4 Social capital. Social activity is an important source of information, human resources, innovative ideas, and financial and emotional support (Greve and Salaff, 2003; Yezza *et al*., 2021). Previous studies generally believed that there is a positive relationship between entrepreneurs' social intelligence and entrepreneurial performance (Ostgaard and Birley, 1996). Successful entrepreneurs are likely to spend more time communicating with business partners, customers, suppliers, and employees than unsuccessful ones (Duchesneau and Gartner, 1990). Different occupations can lead to the accumulation of different amounts and types of social capital. Occupations that need to establish and maintain interpersonal relationships are more conducive to accumulating valuable social capital (Massimo *et al*., 2005). Therefore, we propose the following hypothesis:

H2d. The greater the social capital accumulated from previous occupations, the better the entrepreneurial performance.

3.2.5 Financial capital. Financial capital plays an important role in the survival and growth of start-ups (Huang, 2016). First, sufficient capital can reduce operational risk (Huang, 2016). Most start-ups face resource shortages and environmental uncertainty in the early stages (Zaefarian *et al*., 2011). Adequate financial resources can improve start-ups' ability to withstand unfavourable shocks and cope with uncertainty (Cooper *et al*., 1994). Firms will then have enough capital to explore new opportunities and easily expand their businesses (Songling *et al*., 2018). Second, sufficient financial capital enables firms to pursue unique strategies that cannot be imitated by competitors, thus obtaining competitive advantages (Huang *et al*., 2012). Entrepreneurs with rich financial experience are more likely to secure funding (Shane and Cable, 1998; Anwar *et al*., 2018). Therefore, we propose the following hypothesis:

H2e. The greater the financial capital accumulated from previous occupations, the better the entrepreneurial performance.

3.2.6 Risk-taking ability. Risk-taking ability is one of the most important entrepreneurial competencies (Man *et al*., 2002). An entrepreneur is "an organiser of an economic venture, especially one who organises, owns, manages and assumes the risk of business' (Merriam-Webster, 2011). Entrepreneurs must make decisions in uncertain situations and have long been assumed to be more risk-tolerant than the general population (Koudstaal *et al*., 2016). A successful entrepreneur must be willing to take risks by enthusiastically promoting the development and/or

implementation of innovations inside a firm through a resource acquisition process (Jain, 2011). Thus, risk-taking abilities are closely related to entrepreneurial success. Meanwhile, entrepreneurs' previous work experience can better equip them to cope with the uncertainties in starting a business (Zhang *et al*., 2013). Practitioners can accumulate risk-taking abilities from different occupational experiences (Dencker, 2014). Therefore, we propose the following hypothesis:

H2f. The more the risk-taking ability accumulated from previous occupations, the better the entrepreneurial performance.

3.2.7 Creativity. Creativity has been viewed as the construction of ideas or products, which are new, and potentially useful (Amabile, 1997). According to Schumpeter (1967), the most distinguishing characteristic of an entrepreneur is their innovative nature. The Schumpeterian view has been substantiated by other empirical studies (Nair and Pandey, 2006). Creativity and innovation are inherent conditions in an entrepreneur's role (Timmons, 1978) and entrepreneurs are usually more creative than others (Jain, 2011). While a creative person is not necessarily a successful entrepreneur, creativity is one of the most important personality traits of a successful entrepreneur (Kao, 1991). Simultaneously, work experience influences employee creativity. Challenging and complex work drives individual creativity, while routine work impedes it (Chae and Choi, 2018). Therefore, the seventh hypothesis is proposed:

H2g. The greater the creativity cultivated from previous occupations, the better the entrepreneurial performance.

4. Research design

4.1 Data and variables

The data for the empirical study are from the most recent database of the China Labor-Force Dynamics Survey (CLDS) in 2016 and 2018. CLDS provides data on individuals' working history and entrepreneurial activities. The sample size included 37,634 individuals. Although there is no survey database of occupational characteristics in China, the U.S. Occupational Information Network (O*NET) and CLDS databases have similar categories of occupation classification. The occupational characteristic information for CLDS can be obtained by matching it with the O*NET database. Occupations that are available in China, but not in the U.S., are replaced by similar occupations. For example, the "Chinese Communist Party (CPC) leaders at all levels" is replaced by the "chief executives" in the public sector. The O*NET database, which includes more than 900 categories of occupational information, provides the characteristics (e.g., skills, knowledge, abilities, interests, work context and styles) for each occupation. The descriptor for each occupation contains specific elements with data ratings. The O*NET database is widely used to quantitatively evaluate occupational experiences (Frey and Osborne, 2017; Sorgner and Fritsch, 2018; Laffineur et al., 2020). Through the integration of the two databases, the samples met the demands of empirical studies. Participants with no work experience or those who are not currently employed are

excluded. Finally, the number of valid samples for testing entrepreneurial entry was 27,615, of which 3,928 were valid for testing entrepreneurial performance.

4.1.1 Dependent variables. Entrepreneurial entry: Entrepreneurs are defined as individuals who are running a business independently or own a share of the businesses they are starting (Failla, 2015). Hence, the categories of employer and self-employed in the CLDS database can be considered as entrepreneurs. The variable was assigned a value of 1 if the interviewees were entrepreneurs, and 0 if the interviewees were employees.

Entrepreneurial performance: There are several ways to measure enterprise performance. The most common indicators include total sales, employment, asset scale, market share, and profit (Shepherd and Wiklund, 2009). According to the survey questions of the CLDS, the capital value-added ratio was used to measure entrepreneurial performance.

$$Value\text{-}added\ ratio\ (VAR) = \frac{Total\ assets}{Initial\ invesment} \quad (1)$$

In the CLDS database, the indicators of *total assets* are divided into six groups, so *entrepreneurial performance* is also assigned to 1-6 according to the VAR value (see Table 1).

4.1.2 Independent variables. To test the theoretical hypotheses proposed in Section 3, the independent variables of occupational experience

must be quantitatively evaluated according to individual work history. Because hypotheses H1c and H2d both examine the impact of social capital on entrepreneurial behaviour, the following nine occupational experiences should be quantitatively evaluated: occupational uncertainty, market contact, social capital, management experience, marketing experience, technological experience, financial capital, risk-taking ability, and creativity. The O*NET database contains information on the characteristics of each occupation. Referring to extant literature (Gaur and Lu, 2007; Iacobucci et al., 2022;), the O*NET database and factor analysis methods were used to quantitatively evaluate the nine aspects of occupational experience, which were treated as independent variables in this study (see Section 4.2.1). One person may have multiple occupational experiences before starting a new business, and the values of occupational experience at different stages are different. Furthermore, experience value is assumed to depreciate over time. Experience gained from recent experiences is more valuable than that associated with earlier experiences (Benkard, 2000). The depreciation effect is modelled using the perpetual inventory method when the value of occupational experience is converted into the independent variables of personal experience (Arrazola and de Hevia, 2004). The value of personal work experience is the accumulation of previous work experiences after depreciation. Therefore, the independent variables of experience were calculated as follows:

$$X = \sum_{k=1}^{N} \sum_{j=1}^{n_k} (X_{\mathrm{k}} \times R^{j}) \times R^{T_k} \qquad (2)$$

In Equation (2), N is the number of previous occupations. k is the occupational type. X_k is the value of occupational experience for

occupation k. n_k is the interviewee's working years in occupation k. T_k is the number of years between leaving occupation k and starting a new business. R is the depreciation rate of the experience. Referring to Arrazola and de Hevia (2004), a depreciation rate of 20% per annum was assumed ($R = 0.8$).

4.1.3 Control variables. The following factors related to entrepreneurs were controlled in the empirical study: the number of founders, age, gender, education, housework time, marital status, Hukou[1], family conditions as children, and parental jobs. The definitions and descriptions of the variables are shown in Table 1.

[Insert Table 1 here]

4.2 Methodology

4.2.1 Factor analysis method. The O*NET database provides information on each occupation, such as abilities, tasks, knowledge, skills, and work context. Nine occupational experiences (independent variables) were evaluated based on the occupational characteristics. Referring to the literature (e.g., Gaur and Lu, 2007; Johnson and Wichern, 2007), the factor analysis method can be used to extract common factor information and reduce the number of independent variables because each variable of occupational experience is calculated by multiple indicators of occupational

[1] Hukou is the Chinese system of registered residence. There are the two types of Hukou, namely, urban and rural.

characteristics. The evaluation process is as follows:

Step 1: Establishing the evaluation model of occupational characteristics

According to the relative theories of entrepreneurial personalities (e.g., Low and Macmillan, 1988; González Moreno *et al*., 2019), occupational characteristic variables are extracted from the O*NET database. There were 21 occupational characteristics that reflect the nine independent variables (see Table 2).

Step 2: The applicability test for the factor analysis method

KMO and Bartlett tests were used to test the suitability of the methodology. The results show that all KMO values are greater than 0.5, and the χ^2 statistic values for the Bartlett tests pass the significance test at the 1% level for all independent variables (see Table 2). Therefore, the factor analysis method was effective.

Step 3: Extracting the common factors

The principal component analysis (PCA) is used to extract common factors. The numerical simulation using Monte Carlo method indicated that, PCA method is more suitable than other factor extraction methods (e.g., principal axis factoring and maximum likelihood method) under most circumstances (Kassim 2013; Mabel and Olayemi, 2020). According to Guttman's (1954) eigenvalue-greater-than-1.0 rule, principal components

with eigenvalues greater than one 1.0 were extracted (Kaiser, 1960; Gaur and Lu, 2007). After calculating the score for each factor from the component scoring coefficient matrix, the principal factor scores of the nine independent variables were calculated. Then, the varimax method was used to rotate the load matrix. Comparing to other methods (e.g., oblique rotation), this method conforms the criterion for simple structure better (Crawford and Ferguson, 1970), and ensures all factors are uncorrelated with each other (Kaiser, 1958). The final score was the linear combination of each extracted factor weighted by the variance contribution rate.

[Insert Table 2 here]

4.2.2 Regression models. Regression analysis methods are used to test the theoretical hypotheses proposed in Section 2. This study proposes regression equations based on the data characteristics of dependent variables.

As *entrepreneurial entry* is a binary variable, the following logit regression model is proposed to test Hypotheses 1a-1c:

$$P(\textit{entrepreneurial entry}=1)=\Phi(\alpha_0+\alpha_1 \textit{occupational uncertainty} + \alpha_2 \textit{market contact}+\alpha_3 \textit{social capital} + \sum_{k=4}^{n} \alpha_k \textit{control variables} +\varepsilon_1). \quad (3)$$

In Equation (3), Φ is the logistic cumulative probability density function and ε_1 is the residual error. According to the survey questions of CLDS and existing literature (Delmar and Shane, 2006; Kor and Misangyi, 2008; etc.), the following factors were controlled: *age, gender,*

education, marriage, Hukou, religion, housework time, family conditions, and *parental job.*

Since *entrepreneurial performance* is an ordinal variable, an ordered logit regression model is proposed to test Hypotheses 2a–2g:

$$P(\textit{entrepreneurial performance} \le j) = \Phi(\beta_0 + \beta_1 \textit{management experience} + \beta_2 \textit{marketing experience} + \beta_3 \textit{technological experience} + \beta_4 \textit{social capital} + \beta_5 \textit{financial capital} + \beta_6 \textit{risk–taking ability} + \beta_7 \textit{creativity} + \sum_{k=8}^{n} \beta_k \textit{control variables} + \varepsilon_2). \quad (4)$$

In Equation (4), j is the value of dependent variable; ε_2 is the residual error. According to the survey questions of CLDS and existing literature (Anwar *et al*., 2018; etc.), control variables include *entrepreneur team*, *age, gender, education, marriage, Hukou, family conditions*, and *parental job*.

5. Results

5.1 The impact of occupational experience on entrepreneurial entry

The regression analysis results of Equation (3) are listed in Table 3. All independent and control variables were incorporated into the equation in

Model 1 (Table 3). The results indicate that the coefficients of *market contact* and *social capital* are positive and pass the test at the 1% significance level; however, the estimated coefficient of *occupational uncertainty* is not significant. The stepwise regression method was used to eliminate non-significant variables and reduce collinearity (Model 2) because of the strong correlation between the independent and control variables (Supplementary Table 1). The re-estimated results show that all coefficients of the independent variables are significant. The empirical results also show that: (1) women are less likely to start businesses than men; (2) the higher the level of education, the lower the probability of starting a business; (3) married persons are less likely to start businesses than unmarried persons; (4) rural residents are less likely to start businesses than urban residents; (5) the frequency of participation in religious activities is positively correlated with the probability of entrepreneurial entry; and (6) there are no statistical correlations between other control variables and entrepreneurial entry. To test the robustness of the empirical results, we eliminated all control variables and re-estimated Equation 3 (in Model 3). Although the coefficients show small changes for different methods, the coefficient signs and significance levels are robust.

[Insert Table 3 here]

In addition, the propensity score matching (PSM) method was used to solve the problem of functional form misspecification and further test the causality between independent and dependent variables. Each independent variable was divided into two groups. Samples below the median

were assigned to the control group, while the others were assigned to the treated group. The control variables are treated as matching variables, and the logit model is used to estimate the propensity score. The treated group was then matched with the control group based on propensity score values. Finally, the average difference between two matched groups was calculated and tested. The average treatment effects for the treated group (ATT) are presented in Table 4. All t-statistics passed the test at the 5% significance level and the probability of entrepreneurial entry in the treated group was significantly higher than that of the control group. The PSM method test further proved the reliability of the regression analysis. Thus, Hypotheses H1a-1c are verified.

[Insert Table 4 here]

5.2 The impact of occupational experience on entrepreneurial performance

The regression analysis results of Equation (4) are presented in Table 5. Model 1 shows that the coefficients of *marketing experience*, *financial capital*, *risk-taking ability,* and *creativity* are positive and pass the test at the 10% significance level; however, the estimated coefficients of *management experience*, *technological experience*, and *social capital* are not significant. To avoid the interference of multicollinearity (Supplementary Table 2), a stepwise regression method was used to re-estimate Equation (4). The results of Model 2 (Table 5) show that the coefficient of *technological experience* is still not significant, and other independent variables are positively related to entrepreneurial

performance. In addition, the control variables of *gender* and *housework time* have a significant negative impact on entrepreneurial performance, but *Hukou* is positively related to entrepreneurial performance; the other control variables are not significant. All control variables were eliminated in Model 3 to test the robustness of the parametric estimation for the seven independent variables. The estimated coefficients and significance levels in Models 2 and 3 are very similar; therefore, the empirical results are robust.

[Insert Table 5 here]

Similarly, the PSM method was used to test causality between the independent and dependent variables. The median value was used to classify the control and treated groups. The control variables are treated as matching variables, and the logit model is used to estimate the propensity score. The results of ATT and t-statistics are presented in Table 6. Except for *technological experience*, the other independent variables pass the test at the 10% significance level. The results of the PSM analysis indicated that the results of the regression analysis were reliable. Except for Hypothesis H2c, all other hypotheses were confirmed.

[Insert Table 6 here]

5.3 Assessment of entrepreneurial entry and performance index

Although all independent variables passed the significance test, the coefficient values showed significant differences. The values of occupational

characteristics in O*NET are standardised; therefore, the coefficient values can measure the contribution of different occupational characteristics that affect entrepreneurial activities. Therefore, the estimated coefficients can be used to evaluate the level of entrepreneurial entry and performance for different occupations.

The index of entrepreneurial entry is calculated by weighting three independent variables: *occupational uncertainty, market contact,* and *social capital*. The weights are estimated coefficients. As shown in Figure 1, the index of entrepreneurial entry varies significantly among occupations. There are 18 occupations in which the entrepreneurial entry index is greater than 4.0, such as chief executives (11-1011.00) and marketing managers (11-2021.00). These occupations have higher uncertainty and more opportunities to contact consumers, making it easier for practitioners to discover entrepreneurial opportunities. There are 111 occupations in which the entrepreneurial entry index is in the range of 3.0-4.0, such as lawyers (23-1011.00) and photographers (27-4021.00). There were 353 occupations in which the entrepreneurial entry index was in the range of 2.0-3.0. Typical occupations of this group include web administrators (15-1199.03) and civil engineers (17-2051.00). There are 336 occupations with an entrepreneurial entry index between 1.0 and 2.0, such as singers (27-2042.01) and tour guides and escorts (39-7011.00). There are 149 occupations in which the entrepreneurial entry index is less than 1.0, such as soldiers and brazers (51-4121.07). These occupations are very stable and offer fewer opportunities to contact the market; thus, practitioners are less likely to start a business.

[Insert Figure 1 here]

Similarly, the entrepreneurial performance index for different occupations can be evaluated by weighting six occupational characteristic variables: *management experience*, *marketing experience*, *financial capital*, *social capital*, *risk-taking ability*, and *creativity*. As shown in Figure 2, the entrepreneurial performance index varies slightly among different occupations. Occupations with an entrepreneurial performance index greater than 4.0 includes chief executives (11-1011.00), sales managers (11-2022.00) and treasurers and controllers (11-3031.01), There occupations are helpful for accumulating entrepreneurial capital resources, such as management experience, social capital, and financial capital. There are 95 occupations with an entrepreneurial performance index between 3.0, and 4.0; a typical occupation of this group is public relations and fundraising managers (11-2031.00). There are 368 occupations in which the entrepreneurial performance index is between 2.0 and 3.0, such as online merchants (13-1199.06) and copy writers (27-3043.04). There are 415 occupations with an entrepreneurial performance index between 1.0 and 2.0, such as traffic technicians (53-6041.00) and costume attendants (39-3092.00). Only 86 occupations, such as dishwashers (35-9021.00), had an entrepreneurial performance index below 1.0. The main reason is that people in these occupations find it difficult to obtain resources and competence that are helpful for entrepreneurial success.

[Insert Figure 2 here]

6. Discussion

Many studies have confirmed the impact of work experience on entrepreneurial activities (e.g., Failla, 2015; Arte *et al*., 2017; Bignotti and le Roux, 2020). To the best of our knowledge, there is no literature concerning how work experience affects entrepreneurial activities from the occupational perspective. In the existing literature, occupation has always been treated as a "black box," and heterogeneity among occupations is ignored. The main reason is that it is difficult to accurately define and measure occupational experience because of the diversity and complexity of the occupational types (Sahinidis *et al.*, 2021). As a result, the influencing mechanism of founders' previous experiences on entrepreneurial activities has never been clearly revealed. This paper quantitatively evaluated the occupational characteristics from multiple dimensions (including working knowledge, skills, abilities, work activities and work context), consequently opening the "black box" of occupational experience. By matching occupational characteristics with entrepreneurial capital and competencies, the transmission mechanism of the influence of previous experience on entrepreneurial activities was comprehensively revealed from the perspective of specific occupational characteristics.

Some studies have examined the impact of different types of work experience (e.g., blue-collar vs. white-collar, manager vs. employee, public sector vs. private sector) on entrepreneurial entry (Miralles, 2016; Kautonen et al., 2010; Leyden, 2016). The main reasons include: blue-collar workers are less creative than white-collar workers, managers have more entrepreneurial competence than employees, and public-sector workers

lack entrepreneurship (McDonough, 2006; Marshall and Gigliotti, 2020). Because the heterogeneity of occupational characteristics has not been distinguished precisely, the reasons mentioned above are subjective assumptions and lack sufficient evidence (Miralles et al., 2015). Furthermore, the classification of work experience types in the existing literature is imprecise. Differences in entrepreneurial behaviours among white-collar workers (or blue-collar workers) have not been investigated (Sahinidis *et al.*, 2021). To fill this void, this study proposes three mechanisms by which occupational experience affects entrepreneurial entry based on the TPB theory: *occupational uncertainty*, *market contact,* and *social capital*. The empirical results show that these three occupational characteristics are significant factors that influence entrepreneurial entry. These results provide a new theoretical foundation for the existing literature.

There are two main opinions about the impact of work experience on entrepreneurial performance: "jacks-of-all-trades" theory and experience-type hypothesis. The theory of "jacks-of-all-trades posits that founders' diverse work experiences are conducive to entrepreneurial success (Patel and Ganzach, 2019; Kurczewska et al., 2020). The experience-type hypothesis argues that a specific experience is more conducive to entrepreneurial success than a generic one (Furlan, 2019). Specific experiences include industry and entrepreneurial experience (Unger *et al.*, 2011). However, these views regard occupation as a "black box" and ignore the heterogeneity of different occupational experiences. Referring to the view of entrepreneurial capital resources (Guritno *et al.,* 2019), this study proposes seven hypotheses of occupational experience affecting

entrepreneurial performance: management experience, marketing experience, technological experience, social capital, financial capital, risk-taking ability, and creativity. The empirical results showed that all of these factors, except technological experience, significantly influenced entrepreneurial performance. Thus, different occupational experiences can cultivate different entrepreneurial competencies. These results provide a new explanation for the debates on this topic (Boso *et al*., 2019): the types of experience in different occupations cannot be ignored.

In contrast to the traditional rough classification (e.g., blue-collar vs. white-collar), this study evaluates the entrepreneurial entry index and entrepreneurial performance index for 967 occupations based on the empirical results. These results have important applications in various fields. The scrutiny of entrepreneurial entry index and entrepreneurial performance index can be used to evaluate entrepreneurs' potential according to their occupation history. For venture capitalists, these indices can be used to assess the potential for entrepreneurs or start-up projects. It is important for employees who are ready to start their own businesses to accumulate work experience. Potential entrepreneurs can effectively cultivate their keen sense of business resources and information and develop entrepreneurial awareness. Simultaneously, the occupational experience with a higher entrepreneurial performance index can help entrepreneurs obtain more useful resources and competence, which will promote their entrepreneurial success.

7. Conclusions

What types of people are more likely to start a business and be successful? Much empirical evidence indicates that entrepreneurial activities differ significantly among occupational practitioners. However, few studies have examined heterogeneity among occupations and provided reasonable explanations because it is difficult to quantitatively evaluate occupational experience. Based on the theory of TPB and entrepreneurial resource capital, this study proposes 10 hypotheses about the effect of occupational experience on entrepreneurial entry and performance. Occupational characteristic information and factor analysis methods were used to solve the challenge of the diversity of occupational types and characteristics. The empirical results showed that occupational characteristics, including occupational uncertainty, market contact, and social capital gained from previous experience, significantly affect entrepreneurial entry. Meanwhile, occupational characteristics, including management experience, marketing experience, social capital, financial capital, risk-taking ability, and creativity, accumulated from previous experience, have a significant impact on entrepreneurial performance. Using these empirical results, this study evaluated the entrepreneurial entry and performance indices for each occupation.

This study has several important theoretical and practical implications. First, it is among the first to examine how occupational experience affects entrepreneurial activities. Existing literature has studied this issue from the perspective of occupational types or diversity of experience.

However, they all regarded occupation as a "black box" and ignored the heterogeneity of the different occupations. This study attempted to relax the traditional assumption of representative occupations and analyse the heterogeneity from multiple dimensions of occupational characteristics. New data and methods were used to address the challenge that occupational experience cannot be evaluated. Second, this study comprehensively reveals the routes and mechanisms by which occupational experience affects entrepreneurial activities. The existing literature has limitations in explaining the heterogeneity of different types of experiences affecting entrepreneurial behaviour. For instance, blue-collar workers are considered less creative than white-collar workers, but this theory lacks in-depth analysis of occupational characteristics. This study proposes and verifies nine influencing mechanisms between previous experience and entrepreneurial activities by matching occupational characteristics with entrepreneurial competence. These results provide a new theoretical explanation for the empirical evidence. Third, this study evaluated the heterogeneity of occupational experience in promoting entrepreneurial activities and is the first to calculate the entrepreneurial entry index and entrepreneurial performance index for each occupation. These results have great value for guiding entrepreneurial activities.

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Table 1. Variable definition and description

Variable type	Symbol	Units	Definitions and description
Dependent variables	*Entrepreneurial entry*		Employers or self-employment=1; employees=0
	Entrepreneurial performance		Entrepreneurial performance is divided into six groups according to the *value-added ratio* (*VAR*). The *entrepreneurial performance* recoded as: 1 if $VAR \leq 0.2$; 2 if $0.2 < VAR \leq 0.5$; 3 if $0.5 < VAR \leq 1$; 4 if $1 < VAR \leq 2$; 5 if $2 < VAR \leq 5$; 6 if $5 < VAR \leq 0.5$. The higher the value, the better the entrepreneurial performance.
Independent variables	*Occupational uncertainty*		Based on the occupational characteristics in the O*NET database, this paper establishes an indicator system to evaluate 9 occupational characteristic variables. The factor analysis method will be used to calculate these variables (see section 3.2.1). Then depreciation effects are considered when occupational characteristics are converted into independent variables.
	Market contact		
	Social capital		
	Management experience		
	Marketing experience		
	Technological experience		
	Financial capital		
	Risk-taking ability		

	Creativity		
	Team	Persons	The number of founders.
	Age	Years	The entrepreneur’s age.
	Gender		Male=1; female=0.
	Education		Illiteracy=1; primary education=2; junior education=3; high-school and technical secondary education =4; junior college education=5; undergraduate education=6; post-graduate education=7; doctoral education=8.
Control variables	*Housework time*	Minutes	The average time spent on household duties per day.
	Marriage		Married or cohabit =1; Others=0.
	Hukou		Urban =0, rural =1.
	Religion	Times	Times of participation in religious activities.
	Family conditions		At the age of 14, individuals assess his or her family's finances. Ranked as: 1 (Low)-10 (High)
	Parental job		Both parents are employees=0, father or mother is employer (self-employment)=1.

Table 2. The feature vector indicators and applicability test for factor analysis

Independent variables	Occupational characteristics	References	KMO test	Bartlett test (χ^2)
Occupational uncertainty	Enterprising Job Hazards Level of Competition	Laffineur et al., (2020). Sorgner and Fritsch (2018)	0.545	181.752
Market contact	Sales and Marketing Getting Information	Converse et al. (2004); Gabrielsson and Politis (2012); Mamabolo and Myres (2020)	0.500	23.181
Social capital	Establishing and Maintaining Interpersonal Relationships Communicating with Persons Outside Organization	Nahapiet and Ghoshal (1998); Greve and Salaff (2003); Frey and Osborne (2017)	0.500	760.450
Management experience	Leadership Developing and Building Teams Administration and Management	Gupta et al. (2004); Shane (2008);Dragoni et al.(2011); Laffineur et al. (2020)	0.722	1124.738
Market experience	Sales and Marketing Deal With External Customers	Converse et al. (2004); Morgan et al. (2009); Loué and Baronet (2012).	0.500	150.048
Technological experience	Production and Processing Technology Design	Baum and Locke (2004); Loué and Baronet (2012); Acemoglu and Autor (2011); Koster and Andersson (2018)	0.500	71.321
Financial capital	Economics and Accounting Management of Financial Resources	Converse et al. (2004); Parker and van Praag (2012); Songling et al.(2018)	0.500	408.322
Risk taking ability	Enterprising Stress Tolerance	Laffineur et al. (2020); Sorgner and Fritsch(2018); Bonin et al. (2007)	0.500	133.832
Creativity	Originality Thinking Creatively Innovation	Frey and Osborne (2017); Chiang et al.(2015); Farmer et al.(2003); Mamabolo and Myres (2020)	0.707	1704.854

Table 3. The estimation results of occupational experience affecting the entrepreneurial entry

Independent variables	Dependent variable: *entrepreneurial entry* (robust Logit model)		
	Model 1	Model 2	Model 3
Occupational uncertainty	0.00055 (0.00179) [0.00016]	0.00298* (0.00165) [0.00086]	0.02087 *** (0.00150) [0.00627]
Market contact	0.03139*** (0.00253) [0.00880]	0.03402*** (0.00232) [0.00980]	0.03517*** (0.00231) [0.01056]
Social capital	0.10591*** (0.01559) [0.02970]	0.07910*** (0.01403) [0.02278]	0.02257* (0.01273) [0.00678]
Age	0.00081 (0.00113) [0.00023]		
Gender	-0.13886*** (0.02180) [-0.03894]	-0.16120*** (0.01950) [-0.04643]	
Education	-0.14744*** (0.00540) [-0.04135]	-0.14535*** (0.00458) [-0.04186]	
Marriage	0.17112*** (0.03561) [0.04799]	0.19699*** (0.02974) [0.05673]	
Hukou	-0.17705*** (0.02667) [-0.04965]	-0.17198*** (0.02321) [-0.04953]	
Religion	0.00187* (0.00108) [0.00053]	0.00245*** (0.00086) [0.00070]	
Housework time	-0.00035 (0.00024) [-0.00009]		
Family conditions	-0.00940 (0.00595) [-0.00264]		
Parental job	0.02143 (0.03128) [0.00601]		

Constant	0.00332 (0.06538)	0.04571 (0.04115)	-0.73054*** (0.00842)
Wald χ^2	1585.15	1967.98	802.85
Observations	17,881	21,922	27,615

Note: *, **, and *** denote the levels of significance at 10%, 5%, and 1% levels respectively; the standard errors are listed in parentheses; the marginal effects (dy/dx) are listed in brackets; similarly hereinafter.

Table 4. The PSM tests for the entrepreneurial entry equation

Indicator	Independent variables	Treated	Controls	Difference	T-statistic
ATT	*Occupational uncertainty*	0.29038	0.14729	0.14309 (0.07084)	2.02**
	Market contact	0.32049	0.19666	0.12383 (0.01684)	7.35***
	Social capital	0.29962	0.20357	0.09605 (0.03434)	2.80***

Note: ATT is average treatment effect for the treated.

Table 5. The parameter estimation for entrepreneurial performance model

Independent variables	Dependent variable: *entrepreneurial performance* (ordered Logit model)		
	Model 1	Model 2	Model 3
Management experience	0.07437 (0.06412)	0.09525* (0.04992)	0.10608** (0.05146)
Marketing experience	0.08249** (0.03349)	0.04546* (0.02542)	0.05784** (0.02606)
Technological experience	-0.00851 (0.04464)		0.01896 (0.03369)
Social capital	0.11887 (0.08498)	0.10555* (0.06263)	0.11094* (0.06374)
Financial capital	0.15868*** (0.03957)	0.11046*** (0.03105)	0.12380*** (0.03101)
Risk-taking ability	0.24434*** (0.06793)	0.20422*** (0.05290)	0.20953*** (0.05453)
Creativity	0.15326* (0.08029)	0.14002*** (0.04641)	0.13584** (0.06929)
Team	0.00552 (0.00861)		
Age	0.00147 (0.00223)		
Gender	-0.14785*** (0.04114)	-0.08030** (0.03385)	
Education	0.01692 (0.01233)		
Marriage	-0.00725 (0.07392)		
Hukou	0.15099*** (0.05303)	0.18541*** (0.03990)	
Housework time	-0.00079* (0.00044)	-0.00115*** (0.00033)	
Family condition	0.01029 (0.01169)		
Parental job	-0.03128 (0.06133)		
LR χ^2	119.91	92.50	68.98
Observations	2,712	3,926	3,928

Table 6. The **PSM** test for entrepreneurial performance equation

Indicator	Independent variables	Treated	Controls	Difference	T-statistic
ATT	*Management experience*	5.26049	4.11605	1.14444 (0.32518)	3.52***
	Marketing experience	5.04960	4.21131	0.83829 (0.45153)	1.86*
	Technological experience.	4.09078	4.58582	-0.49504 (0.50845)	-0.97
	Social capital	5.11594	4.08250	1.03343 (0.55111)	1.88*
	Financial capital	5.09249	4.08828	1.0042 (0.54447)	1.84*
	Risk-taking ability	5.28069	4.10409	1.17660 (0.32018)	3.67***
	Creativity	4.83325	4.07686	0.75639 (0.28951)	2.61***

Note: ATT is average treatment effect for the treated.

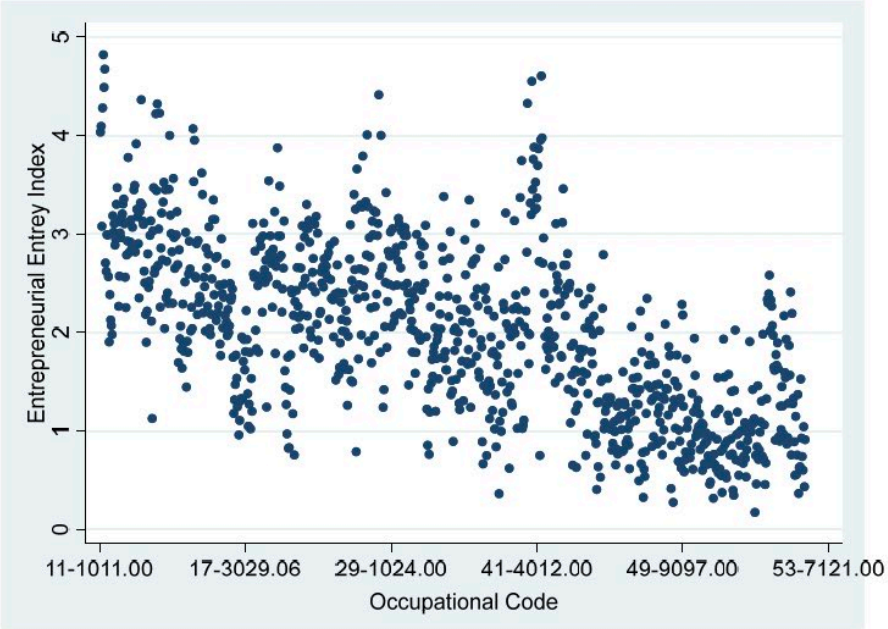

Figure 1. The entrepreneurial entry index for each occupation

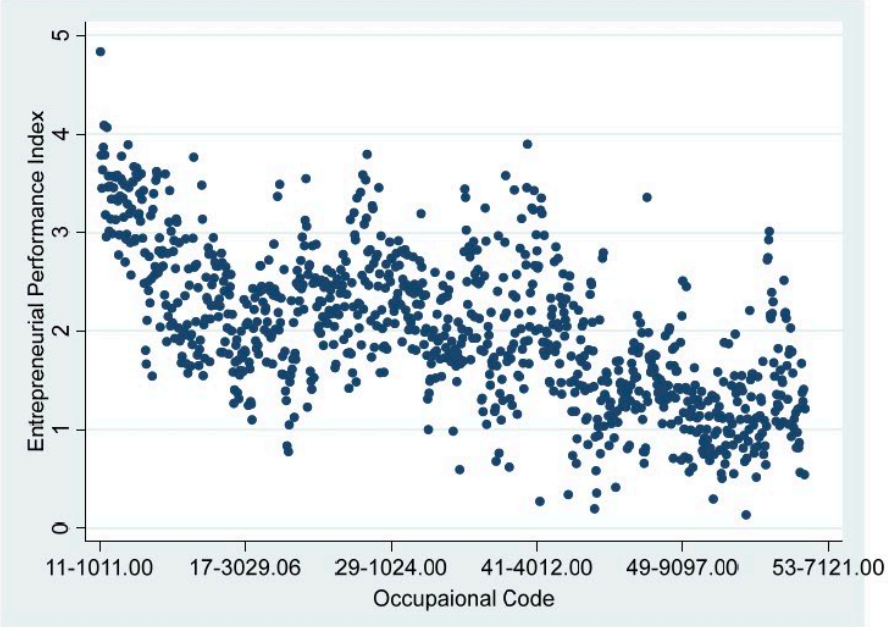

Figure 2. The entrepreneurial performance index for each occupation

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	Technological experience		
	Financial capital		
	Risk-taking ability		
	Creativity		
Control variables	*Team*	Persons	The number of founders.
	Age	Years	The entrepreneur's age.

Gender		Male=1; female=0.
Education		Illiteracy=1; primary education=2; junior education=3; high-school and technical secondary education =4; junior college education=5; undergraduate education=6; post-graduate education=7; doctoral education=8.
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Occupational uncertainty	Enterprising Job Hazards Level of Competition	Laffineur et al., (2020). Sorgner and Fritsch (2018)	0.545	181.752
Market contact	Sales and Marketing Getting Information	Converse et al. (2004); Gabrielsson and Politis (2012); Mamabolo and Myres (2020)	0.500	23.181
Social capital	Establishing and Maintaining Interpersonal Relationships Communicating with Persons Outside Organization	Nahapiet and Ghoshal (1998); Greve and Salaff (2003); Frey and Osborne (2017)	0.500	760.450
Management experience	Leadership Developing and Building Teams Administration and Management	Gupta et al. (2004); Shane (2008);Dragoni et al.(2011); Laffineur et al. (2020)	0.722	1124.738
Market experience	Sales and Marketing Deal With External Customers	Converse et al. (2004); Morgan et al. (2009); Loué and Baronet (2012).	0.500	150.048
Technological experience	Production and Processing Technology Design	Baum and Locke (2004); Loué and Baronet (2012); Acemoglu and Autor (2011); Koster and Andersson (2018)	0.500	71.321
Financial capital	Economics and Accounting Management of Financial Resources	Converse et al. (2004); Parker and van Praag (2012); Songling et al.(2018)	0.500	408.322
Risk taking ability	Enterprising Stress Tolerance	Laffineur et al. (2020); Sorgner and Fritsch(2018); Bonin et al. (2007)	0.500	133.832
Creativity	Originality Thinking Creatively Innovation	Frey and Osborne (2017); Chiang et al.(2015); Farmer et al.(2003); Mamabolo and Myres (2020)	0.707	1704.854

Table 3. The estimation results of occupational experience affecting the entrepreneurial entry

Independent variables	Dependent variable: *entrepreneurial entry* (robust Logit model)		
	Model 1	Model 2	Model 3
Occupational uncertainty	0.00055 (0.00179) [0.00016]	0.00298* (0.00165) [0.00086]	0.02087 *** (0.00150) [0.00627]
Market contact	0.03139*** (0.00253) [0.00880]	0.03402*** (0.00232) [0.00980]	0.03517*** (0.00231) [0.01056]
Social capital	0.10591*** (0.01559) [0.02970]	0.07910*** (0.01403) [0.02278]	0.02257* (0.01273) [0.00678]
Age	0.00081 (0.00113) [0.00023]		
Gender	-0.13886*** (0.02180) [-0.03894]	-0.16120*** (0.01950) [-0.04643]	
Education	-0.14744*** (0.00540) [-0.04135]	-0.14535*** (0.00458) [-0.04186]	
Marriage	0.17112*** (0.03561) [0.04799]	0.19699*** (0.02974) [0.05673]	
Hukou	-0.17705*** (0.02667) [-0.04965]	-0.17198*** (0.02321) [-0.04953]	
Religion	0.00187* (0.00108) [0.00053]	0.00245*** (0.00086) [0.00070]	
Housework time	-0.00035 (0.00024) [-0.00009]		
Family conditions	-0.00940 (0.00595) [-0.00264]		
Parental job	0.02143 (0.03128) [0.00601]		

Constant	0.00332 (0.06538)	0.04571 (0.04115)	-0.73054*** (0.00842)
Wald χ^2	1585.15	1967.98	802.85
Observations	17,881	21,922	27,615

Note: *, **, and *** denote the levels of significance at 10%, 5%, and 1% levels respectively; the standard errors are listed in parentheses; the marginal effects (dy/dx) are listed in brackets; similarly hereinafter.

Table 4. The PSM tests for the entrepreneurial entry equation

Indicator	Independent variables	Treated	Controls	Difference	T-statistic
ATT	*Occupational uncertainty*	0.29038	0.14729	0.14309 (0.07084)	2.02**
	Market contact	0.32049	0.19666	0.12383 (0.01684)	7.35***
	Social capital	0.29962	0.20357	0.09605 (0.03434)	2.80***

Note: ATT is average treatment effect for the treated.

Table 5. The parameter estimation for entrepreneurial performance model

Independent variables	Dependent variable: *entrepreneurial performance* (ordered Logit model)		
	Model 1	Model 2	Model 3
Management experience	0.07437 (0.06412)	0.09525* (0.04992)	0.10608** (0.05146)
Marketing experience	0.08249** (0.03349)	0.04546* (0.02542)	0.05784** (0.02606)
Technological experience	-0.00851 (0.04464)		0.01896 (0.03369)
Social capital	0.11887 (0.08498)	0.10555* (0.06263)	0.11094* (0.06374)
Financial capital	0.15868*** (0.03957)	0.11046*** (0.03105)	0.12380*** (0.03101)
Risk-taking ability	0.24434*** (0.06793)	0.20422*** (0.05290)	0.20953*** (0.05453)
Creativity	0.15326* (0.08029)	0.14002*** (0.04641)	0.13584** (0.06929)
Team	0.00552 (0.00861)		
Age	0.00147 (0.00223)		
Gender	-0.14785*** (0.04114)	-0.08030** (0.03385)	
Education	0.01692 (0.01233)		
Marriage	-0.00725 (0.07392)		
Hukou	0.15099*** (0.05303)	0.18541*** (0.03990)	
Housework time	-0.00079* (0.00044)	-0.00115*** (0.00033)	
Family condition	0.01029 (0.01169)		
Parental job	-0.03128 (0.06133)		
LR χ^2	119.91	92.50	68.98
Observations	2,712	3,926	3,928

Table 6. The **PSM** test for entrepreneurial performance equation

Indicator	Independent variables	Treated	Controls	Difference	T-statistic
ATT	*Management experience*	5.26049	4.11605	1.14444 (0.32518)	3.52***
	Marketing experience	5.04960	4.21131	0.83829 (0.45153)	1.86*
	Technological experience.	4.09078	4.58582	-0.49504 (0.50845)	-0.97
	Social capital	5.11594	4.08250	1.03343 (0.55111)	1.88*
	Financial capital	5.09249	4.08828	1.0042 (0.54447)	1.84*
	Risk-taking ability	5.28069	4.10409	1.17660 (0.32018)	3.67***
	Creativity	4.83325	4.07686	0.75639 (0.28951)	2.61***

Note: ATT is average treatment effect for the treated.

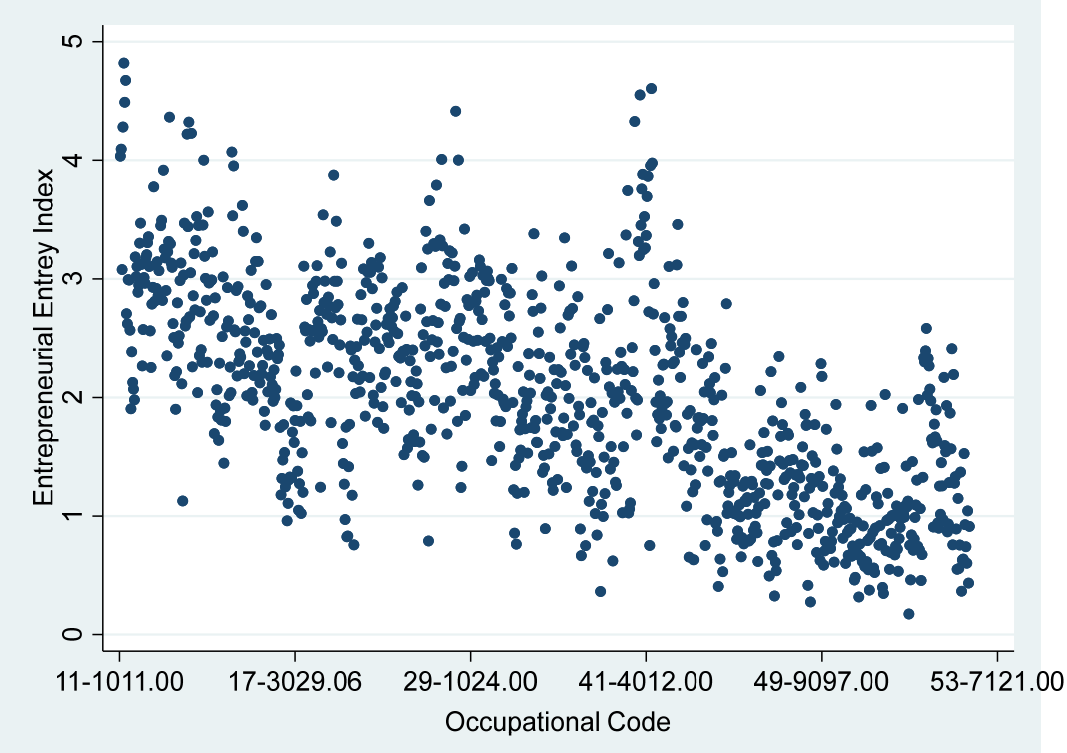

Figure 1. The entrepreneurial entry index for each occupation

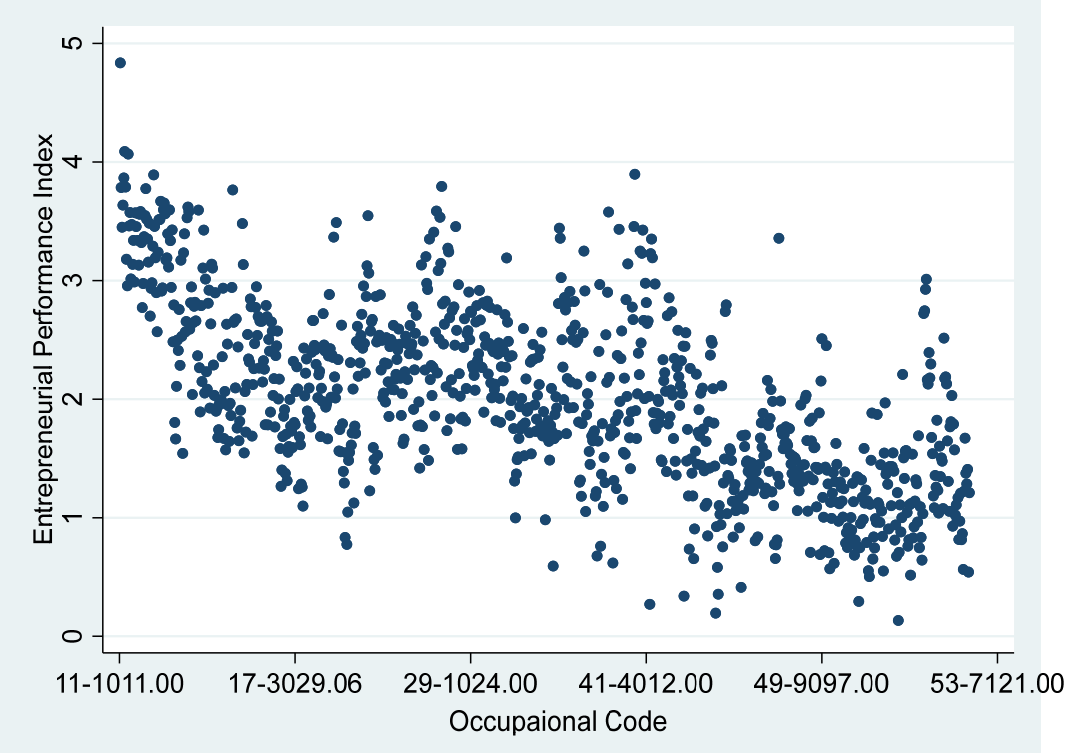

Figure 2. The entrepreneurial performance index for each occupation